

ANSC/TPSS 603  
Project - Designing Experiments

Select an experiment that you would be interested in performing and answer the following questions in relation to it.

1. What are the effects or treatments that are to be tested? What will they be tested on? Under what conditions? What will be measured? Based on previous work (literature review) what is the CV or standard deviation for the response to be measured? What is the difference between treatments it is desired to detect?
  - a. Describe the experiment to be conducted, define the hypothesis and select the treatment design that you believe is most appropriate for this experiment. Give reasons for your selection.
  - b. Select the experimental design that you believe is most appropriate for this experiment and give reasons for your selection.
  - c. Calculate the number of replicates required for this experiment. You may vary the desired difference to be detected between treatments to keep the experiment manageable. Be sure to keep it practical. Give reasons for selecting this number of replicates.
  - d. Sketch the layout for this experiment and identify the treatments. Please randomize the treatments within replicates.
  - e. Write out the analysis of variance for this experiment and show the appropriate F tests.
  - f. Describe the method that will be used to compare treatment means.
  - g. Discuss any special layout or data analysis problems that may be expected in this experiment and indicate the procedures that will be used to solve them. Describe any additional measurements you will make to characterize the environment during the experiment. Also discuss any assumptions you make in designing this experiment.

Please handle this experiment as though it is your own and you as a researcher want the best information from it.